RP-191348

3GPP TSG RAN #84
Newport Beach, USA, June 3-6, 2019

Agenda Item: 8

MOTIVATION FOR NEW WI ON DIRECT DATA TRANSFER IN INACTIVE

Intel Corporation

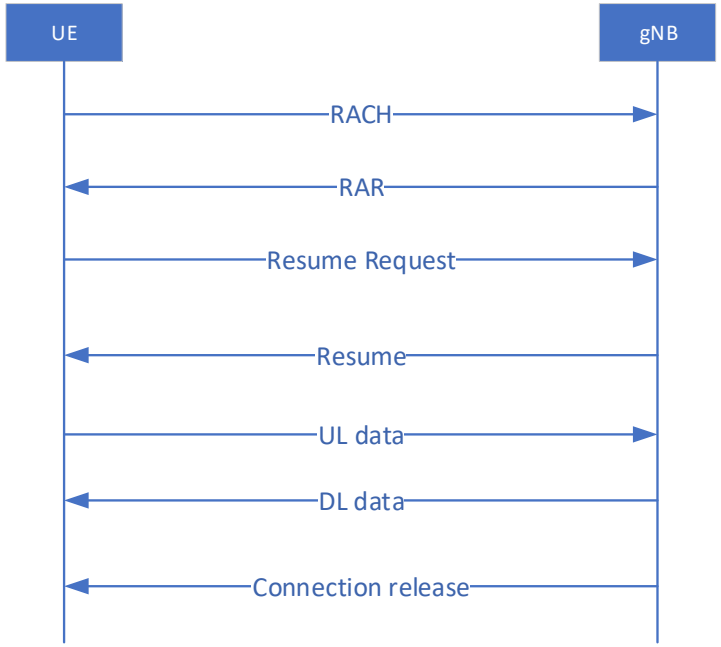
BACKGROUND: INACTIVE STATE

Rel-15 INACTIVE State

- Provides much faster transition to connected
- Fewer signalling compared to Idle to Connected
- Possible to achieve about [30ms] transition

2 step RACH (Rel-16) can be applicable for Resume

- Reduce delay of 4 step RACH
- Msg A the same as msg 3
  - Resume request and Release to be used
  - No reduction in number of messages or signalling sequence expected
  - Overall concepts of INACTIVE re-used
  - UE transitions to CONNECTED, even if it is just for transmission of data and back to Idle



DIRECT DATA TRANSFER IN INACTIVE

Key aspects

- Resume Request/RRCRelease (to INACTIVE) signalling to be avoided
  - Two step RACH could be used to further improve performance
    - UE sends data in msg A of 2 step RACH instead of Resume Request
  - UE may not fully transition to CONNECTED if there is no further data to send
- Data to be sent in same cell or within an RNA
- Data to be sent with security (both integrity and ciphering)
- Other optimisations can be considered
  - Avoid Paging in the downlink

KEY BENEFITS

Minimise latency, signalling and power consumption

- UE can send data directly without signalling and immediately go back to INACTIVE or move to connected
- Avoid multistep signalling of Resume procedure before data transmission
- Avoid RRC connection release with Suspend configuration related signalling
- Security to be supported for data, including Integrity protection and ciphering
  - Security context available in UE when UE is INACTIVE to allow secure transfer of data in INACTIVE
  - INACTIVE already provides security framework to enable this
- Downlink Paging optimisation can allow similar enhancements for DL traffic
  - Direct transfer of DL data without transitioning to CONNECTED

intel®

experience
what's inside™